

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An apparatus, comprising:
 - a memory unit to store data;
 - a plurality of parallel data paths to process said data;
 - a plurality of control units to control said data paths; and
 - a switch to connect said control units to said data paths, said switch to receive configuration information to establish a first set of connections between at least one of said control units and said multiple data paths to execute a first process using single instruction multiple data processing with said at least one control unit to control said multiple data paths, and a second set of connections between said multiple control units and said multiple data paths to execute a second process using multiple instruction multiple data processing with each control unit to control a single data path; wherein said data paths are configured based upon said connections between said control units and said data paths to perform said first process and said second process in parallel.
2. (Original) The apparatus of claim 1, wherein each control unit controls execution of a single program instruction.
3. (Canceled).

4. (Canceled).
5. (Currently Amended) The apparatus of claim [[4]] 1, wherein each data path performs a same set of operations using said data.
6. (Canceled).
7. (Canceled).
8. (Currently Amended) The apparatus of claim [[4]] 1, wherein each data path performs a different set of operations using said data.
9. (Original) The apparatus of claim 1, further comprising a configuration module to configure said switch to establish said connections in accordance with said configuration information.
10. (Currently Amended) A system, comprising:
 - an antenna;
 - a host processing system;
 - a configuration module to store configuration information; and
 - a reconfigurable communication architecture module to receive said configuration information comprising:

a plurality of processing elements to execute functions for each process, said plurality of processing elements comprising a memory unit to store data, a plurality of parallel data paths to process said data; a plurality of control units to control said data paths, and a switch to connect said control units to said data paths, said switch to receive said configuration information to establish a first set of connections between at least one of said plurality control units and multiple data paths to execute a first process, and a second set of connections between multiple control units and multiple data paths to execute a second process;

a plurality of routing elements to connect said processing elements; and
a plurality of communications mediums to connects said processing elements and
said routing elements in a mesh topology;

 said reconfigurable communication architecture module to configure itself to
 perform single instruction multiple data processing in a said first configuration to execute
 a said first process, and to perform multiple instruction multiple data processing in a said
 second configuration to execute a said second process; wherein said routing elements are
 configured based upon said connections between said processing elements and said
 routing elements to perform said first process and said second process in parallel.

11. (Canceled).

12. (Canceled).

13. (Currently Amended) The system of claim [[12]] 10, wherein each control unit controls execution of a single program instruction.

14. (Canceled).

15. (Canceled).

16. (Currently Amended) A method, comprising:
receiving configuration information at a switch; and
configuring said switch to establish a first set of connections between at least one of a plurality of control units and a plurality of multiple data paths to execute a first process using single instruction multiple data processing with said at least one control unit to control said multiple data paths; and
configuring said switch to establish a second set of connections between said multiple control units and said multiple data paths to execute a second process using multiple instruction multiple data processing with each control unit to control a single data path;
wherein said data paths are configured based upon said connections between said control units and said data paths to perform said first process and said second process in parallel.

17. (Original) The method of claim 16, wherein each control unit controls execution of a single program instruction.

18. (Canceled).
19. (Canceled).
20. (Original) The method of claim 16, further comprising:
receiving a first set of data;
storing said first set of data in a memory unit; and
processing said first set of data with said data paths using said first set of connections.
21. (Original) The method of claim 16, further comprising:
receiving a second set of data;
storing said second set of data in a memory unit; and
processing said second set of data with said data paths using said second set of connections.
22. (Currently Amended) An article comprising:
a storage medium;
said storage medium including stored instructions that, when executed by a processor, result in receiving configuration information at a switch, configuring said switch to establish a first set of connections between at least one of a plurality of control units and a plurality of multiple data paths to execute a first process using single

instruction multiple data processing with said at least one control unit to control said multiple data paths, and configuring said switch to establish a second set of connections between said multiple control units and said multiple data paths to execute a second process using multiple instruction multiple data processing with each control unit to control a single data path; wherein said data paths are configured based upon said connections between said control units and said data paths to perform said first process and said second process in parallel.

23. (Canceled).

24. (Canceled).